Fernald, no. 553. VERMONT: outlet of Long Pond, Willoughby, July 14, 1896, *G. G. Kennedy;* July 26, 1896, *E. F. Williams.*

GRAY HERBARIUM.

LIMODORUM TUBEROSUM L.

K. K. MACKENZIE.

THE first volume of Gronovius, Flora Virginica, is said to have appeared in 1739. In this work Gronovius was assisted by Linnaeus (Jackson Linnaeus p. 165).

Very fully and carefully described in this work (p. 110) was a plant from Virginia collected by Clayton to which the name *Limodorum* was given. There has never been the slightest question on the part of any botanical author about the identity of the plant so described. It is the plant which has appeared in our manuals of botany either as *Limodorum tuberosum* or *Calopogon pulchellus*.

The description given by Gronovius is as follows:

"*Limodorum*

Helleborine Virginiana bulbosa, flore-atrorubente. Banist. Plukn. Alm. p. 182.

Gladiolo Narbonensi affinis Planta Mariana, floribus minoribus. Pet. Mus. n. 413.

Orchis verna testiculata aquatica, flore pulcherrimo specioso rubro in spicam tenuem disposito, foliis longis angustis. Clayt. n. 76.

Helleborine radice tuberosa, foliis longis angustis, caule nudo, floribus ex rubra pallide purpurascentibus Martyn. Cent. I. T. 50. hujus videtur varietas.

Cal. *nullus, cujus loco Germen.*

Cor. *Petala quinque, ovato-lanceolata, aequalia. Labium inferius constituit Nectarium lineare, longitudine petali longitudinaliter barbatum, apice cordato.*

Stam. *Filamenta vix conspicua. Antherae binae, adnatae corpori lineari arcuato, longitudine corollae, apice appendiculato.*

Pist. *Germen columnare, longitudine corollae, sub receptaculo floris. Stylus filiformis, adnatus corpusculo lineari. Stigma concavum.*

Peric. *Capsula columnaris, trivalvis, angulis dehiscens.*

Sem. *numerosa, scobiforma.*"

In 1740 there also appeared another work with which Linnaeus had a great deal to do. I refer to Royen, Florae Leydensis Prodromus, which is so constantly cited by Linnaeus in his own works as "Roy. lugdb." On page 16 of this work the same plant is again to be found very fully and accurately described.

Linnaeus himself fully described the same plant in various editions of his Genera Plantarum, the second published in 1742 (p. 435); the third published in 1743 (p. 333); the fourth published in 1752 (p. 333); the fifth published in 1754 (p. 407). In all of these his only references are to the original descriptions appearing in Gronovius and Royen.

In 1753 in the second volume of the first edition of the Species Plantarum p. 950 is found the original description of *Limodorum tuberosum* L. This is as follows:

"*LIMODORUM.*

tuberosum. 1. LIMODORUM. Roy. lugdb. 16. Gron. virg. 110. Act. ups. 1740 p. 21.

Helleborine americana, radice tuberosa, foliis longis angustis, caule nudo, floribus ex rubro pallide purpurascentibus. Mart. cent. 50. t. 50.

Habitat in America septentrionali.

Plumierii species americae australis plurimas non vidi."

It will be noted that in the original description of *Limodorum* by Gronovius there is a reference to Martyn's plate 50. The same reference is also given by Royen, and it again appears in the Species Plantarum. Whatever misunderstanding has arisen about the use of the name *Limodorum* has arisen from this reference. The plate in fact illustrates a West Indian orchid, a species of *Bletia.* This species, as illustrated, looks very much like the *Limodorum,* and it is no discredit to Linnaeus that he confused them.

However, it is very plain indeed that what Linnaeus always had primarily in mind, when he used the name *Limodorum,* was the plant described by Gronovius, by Royen, and by himself, from an actual specimen collected by Clayton in Virginia. I do not believe that any one would for a minute argue that merely because a scientist cited a plate from another work when naming and describing a new species from an actual specimen before him that the name given by the scientist should be applied to the plant shown by the plate rather than to the plant actually before the author.

It may be further argued that Linnaeus took his specific name "tuberosum" from Martyn's species. But a reference to the Gronovian description of *Limodorum,* will show that Linnaeus merely selected the most suitable of several available names expressing the same thoughts. Even if this were not so, merely borrowing a name from a descriptive phrase does not, under the circumstances of the

present case, require the name to be used for the plant from which the name was borrowed. It must still be used for the plant actually described.

It is then the only proper thing to do to use the name *Limodorum tuberosum* for the plant of the Eastern United States and it is not proper to use it for the West Indian *Bletia.*

Calopogon pulchellus.

The other name by which our handsome orchid has been known to some botanists is *Calopogon pulchellus* (Salisb.) R. Br. That name goes back to the following description:

"Limodorum.

"Corolla 1-labiata. Anthera 1, Caveae styli dorso inserta, mobilis. Stylus sub anthera 1-labiatus.

"Pulchellum. 1. L. petalis exterioribus recurvulis, interioribus incurvulis: labio erecto, supra basin lateribus reflexo; apice expanso, late cochleaeformi, acuminulato; disco 3-carinato, deinde piloso. L. tuberosum. Linn. Sp. Pl. ed. 2. p. 1345."
Salisbury Prodr. Stirp. 8. 1796.

It will be noted that while Salisbury gives a description, he was really but giving a new name to *Limodorum tuberosum* L. This was one of the "direct and conscious renamings of species already validly named, such as was freely indulged in by Salisbury" to quote the appreciative language of Messrs. Fernald and Weatherby.

In 1805, Willdenow (Sp. Pl. 4: 105) used the name *Limodorum pulchellum* in the genus *Cymbidium* as *C. pulchellum.* He gave no description, merely citing *Limodorum tuberosum* L., Royen, Gronovius, a description by Swartz, Michaux's description of *Limodorum tuberosum* L. and Salisbury's description of *Limodorum pulchellum.*

In 1813 the genus *Calopogon* R. Br. was published (Ait. Hort. Kew (Ed. 2) 5: 204–5). This is as poorly described as can well be imagined. The entire description is "*Calopogon. Brown mss.* Labellum posticum, unguiculatum: lamine barbata. Petala 5 distincta. *Columna* libera. Pollen angulatum." Only one species was given, namely *Calopogon pulchellus.* It is not described at all, but is based solely on *Cymbidium pulchellum* Willd.[1] and a plate of *Limodorum tuberosum* L. in Curtis magazine (pl. 116).

[1] Swartz had previously published the name *Cymbidium pulchellum* based on *Limodorum tuberosum* L. and *Limodorum pulchellum* Salisb. (Nov. Act. Ups. 6: 75; also Schrader Journ. 2: 220. 1799). His work, however, was apparently not known

From the above one will see that the name *Calopogon pulchellus* is directly based on *Limodorum tuberosum*. All of the authors dealing with the two plants (Salisbury, Willdenow and R. Brown) treated them as the same. The name is one arising from Salisbury's habit of renaming plants, so feelingly characterized by Messrs. Fernald and Weatherby. Under the American code of nomenclature the name of our pretty orchid is *Limodorum tuberosum*. Under the Vienna code one is told that one must substitute the very poorly published name *Calopogon* for the older and very carefully described *Limodorum*. This is certainly an excellent illustration of how carelessly that code was prepared. But even under the Vienna code the name of the species is not *Calopogon pulchellus* but is *Calopogon tuberosus* (L.) B.S.P.

Maplewood, New Jersey.

THE ARCTIC VARIETY OF ALOPECURUS AEQUALIS.

M. L. Fernald.

The plant of north temperate regions which passes in America either as *Alopecurus aristulatus* Michx. or as *A. geniculatus*, var. *aristulatus* (Michx.) Torr. has abundant characters to distinguish it from *A. geniculatus* L. of Eurasia, a species locally naturalized in North America. These characters have been clearly set forth by Bicknell[1] and by St. John[2] and, briefly enumerated, are as follows: more delicate habit, glaucous or pale-green color, less geniculate or depressed culms, less inflated sheaths, longer and more slender pale spikes with spikelets only about 2 mm. long, short straight awn about equaling to barely exceeding the glumes and attached near the middle of the lemma, anthers 0.5–1 mm. long, yellowish; the coarser European *A. geniculatus* having, as its name implies, geniculate stems, a full green color, inflated sheaths, coarser and commonly darker spikes with spikelets about 3 mm. long, a long-exserted and twisted awn attached near the base of the lemma, and brown or purple anthers 1.5–2 mm. long.

to Robert Brown, and forms no part of the history of the name *Calopogon pulchellus* as given by Brown. It is, however, the only basis for the erroneous authorship (*Calopogon pulchellus* (Sw.) R. Br.) given in Gray's Manual, 7th Ed., p. 312. It is also most probable that Willdenow had the name of Swartz in mind, although he does not directly say so.

[1] Bicknell, Bull. Torr. Bot. Cl. xxxv. 472 (1908).

[2] St. John, Rhodora, xix. 165 (1917).